

Research on External Power Supplies Will Save Californians Millions

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Fact Sheet

Californians Save Big

If all existing stock of power supplies were upgraded to the California Energy Commission's external power supply standard, Californians will save an estimated 644 gigawatts per hour the amount of energy used by 92,000 homes in one year, or about \$90 million annually.

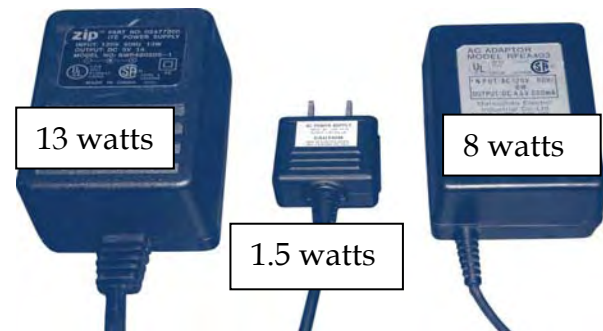
External Power Supplies Are Abundant and Wasteful

Most office equipment and consumer electronic devices use external power supplies to convert the electricity current from alternating current (electrical socket) to direct current. Examples of devices with external power supplies include laptop computers, cordless phones, answering machines, some video game consoles, cordless tools, and computer printers and speakers. The average California home has at least 5-10 of these devices.

In 2004, there were about 145 million external power supplies in California. This number is increasing by 27.5 million units, or about 10 percent, per year. External power supplies can be incredibly inefficient – some as low as 20 percent, which means 80 percent of the energy is wasted as heat. Estimated annual energy consumption of these devices is more than 5,500 gigawatts per hour, or about 2 percent of California's annual electricity use consumption equivalent to the annual energy use of 800,000 homes in California (assuming 7,000 kilowatt-hours year, per home).



Example of typical external power supply use
Source: Pacific Gas and Electric



Smaller Power Supplies are More Efficient
Source: PIER Technical Brief

PIER's Role

In 2003, PIER funded a project to improve the efficiency of internal and external power supplies. This project leveraged the research of others, including the Natural Resources Defense Council, ENERGY STAR® and foreign countries. It led to the development of a test method to determine the efficiency of external power supplies a critical step in the development of subsequent energy policies.

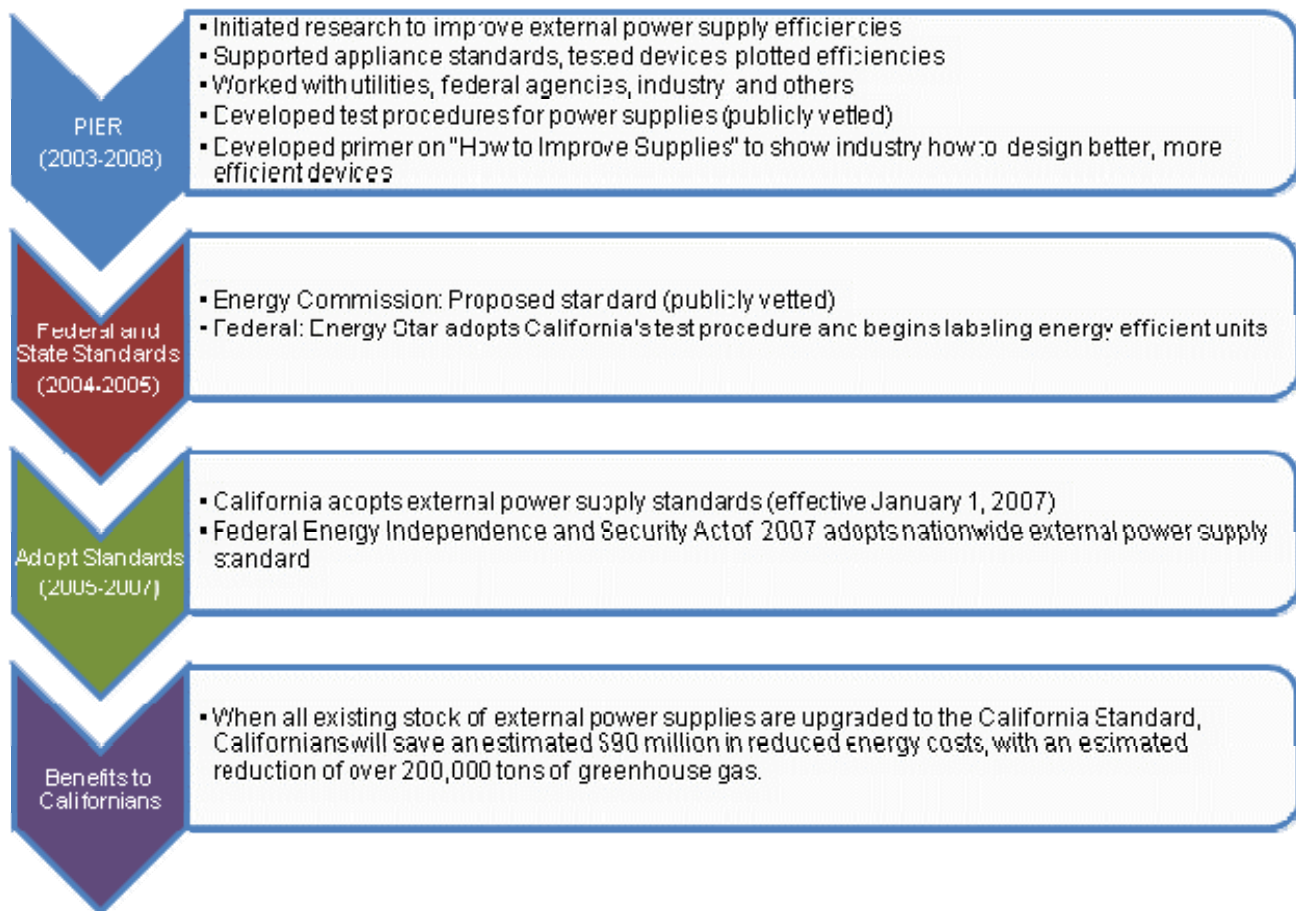
PIER's work led to major collaboration among federal agencies, industry partners, and others, which culminated in the adoption of energy saving standards at both federal and international levels. In 2005, the PIER test method led the Energy Commission to adopt a new external power supply standard with an effective date of January 1, 2007.

PIER's Research Led to Adoption of Federal and International Standards

In 2004, the U.S. ENERGY STAR Program adopted the Energy Commission's test method, as well as

China, Australia, Canada, Brazil and several European countries. In 2005, ENERGY STAR began labeling power supplies that meet the new requirements. Then, in 2007, the Federal Energy Independence and Security Act incorporated efficiency requirements for power supplies using PIER's test method. Assuming up to 270 million new units are sold in the United States, PIER's research has the potential to create an estimated energy savings of \$150 million per year.

External Power Supply – PIER Interactions



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